NELCO

INSTRUCTION

MODEL 101

CONGRATULATIONS!

As the new owner of a Stretch Stitch Sewing Machine, we hope you will take a few minutes to read through this booklet before using your machine for the first time.

Experiment with the many stitches. See how easy it is to dial the stitch patterns, stitch width, and stitch length.

Become aquainted with all the special features such as built-in button-holer, automatic bobbin winder, and twin needle sewing.

As you go through this booklet, you will discover how these and many other features will simplify your sewing. Additional advice on the operation and care of your machine is always available through the Toll Free number.

We believe our machine is simple and fun to use. We hope you will have many years of successful sewing.

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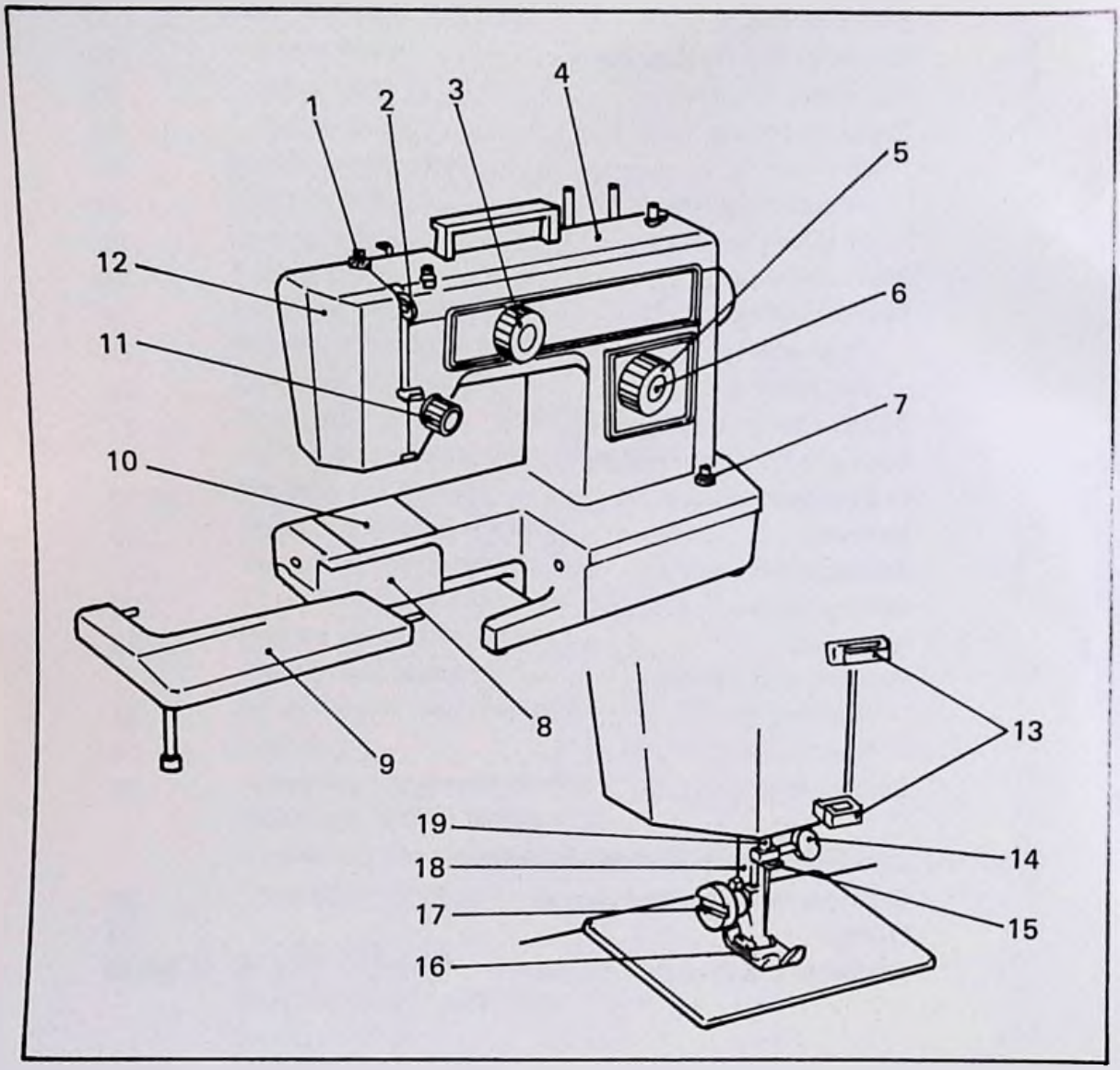
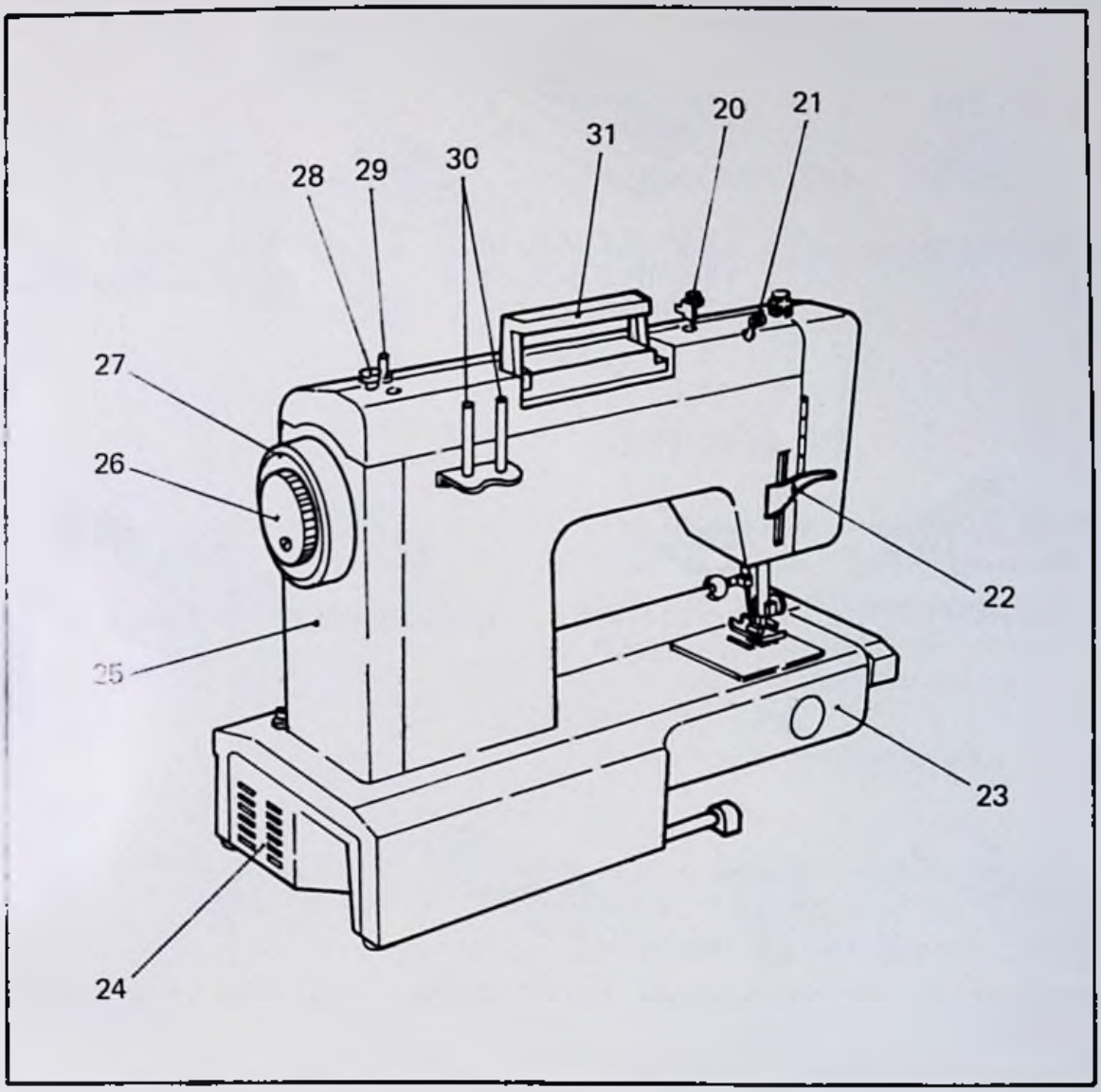
PART I KNOWING YOUR SEWING MACHINE
KNOW THE PARTS
FRONT VIEW



1. Pressure regulator (Patch-O-Matic)
2. Thread take-up lever
3. Pattern selector dial
4. Top cover
5. Stitch length dial
6. Reversing button
7. Switch
8. Shuttle cover
9. Extension table
10. Needle plate
11. Thread tension dial
12. Face plate
13. Face plate thread guides
14. Needle clamp and screw
15. Needle bar thread guide
16. Presser foot
17. Presser foot bracket thumb screw
18. Presser bar
19. Needle bar

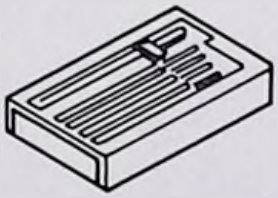
BACK VIEW



20. Bobbin winder thread guide
21. Upper thread guide
22. Presser bar lifter
23. Free arm
24. Terminal cover
25. Belt cover
26. Clutch knob
27. Hand wheel
28. Bobbin winder stopper
29. Bobbin winder spindle
30. Spool pins
31. Carrying handle

ACCESSORIES

3 BOBBINS



3 NEEDLE SIZE 14
1 NEEDLE SIZE 11
1 TWIN NEEDLE

2 FELT PADS
For Thread Spool Pins

BLIND HEM FOOT

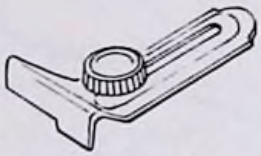
ZIG-ZAG FOOT
(on machine)

HEMMER FOOT

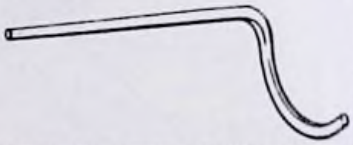
ZIPPER FOOT

BUTTONHOLE FOOT

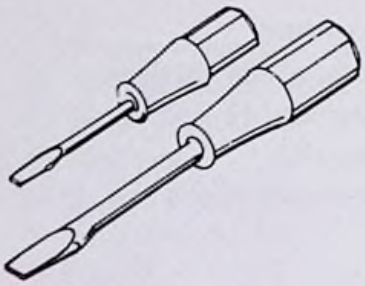
BUTTON SEWING FOOT



CLOTH GUIDE



QUILTING ATTACHMENT

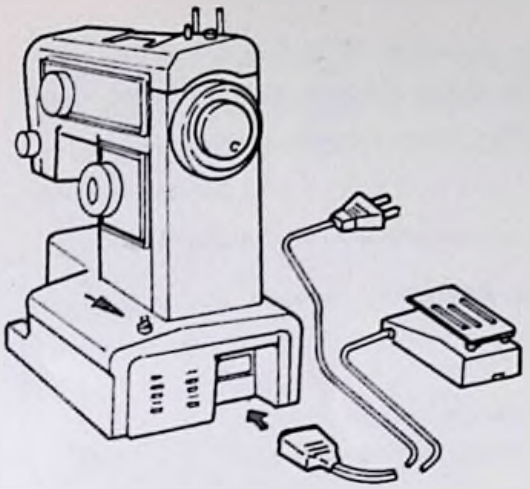


2 SCREW DRIVERS

LIGHT BULB
(on machine)

OIL

SEAM RIPPER

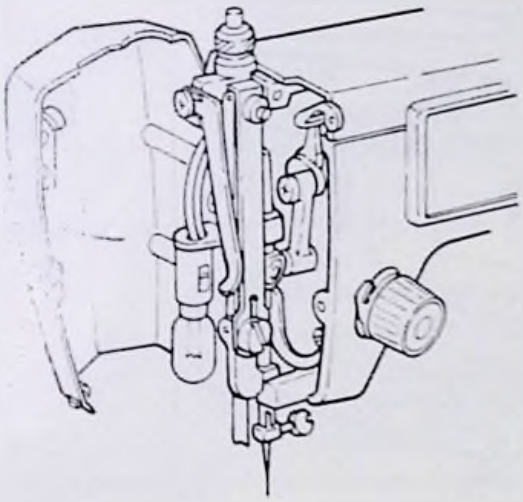


SPEED CONTROL PLUG

Push the speed control plug onto three prong connector.
Plug machine cord into any 110 – 120 volt wall outlet.

LIGHT SWITCH

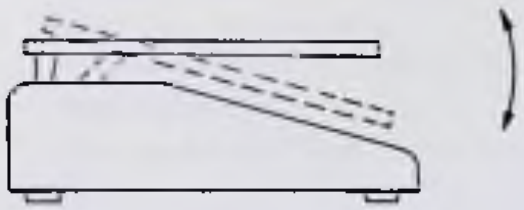
Turn light on and off by pushing light switch.



SEWING LIGHT

The sewing light is located in the face cover as shown. To replace the bulb, turn the light off and open the face cover. Push the bulb up and turn the bulb counter clockwise and remove it from the socket.
Push a new bulb in and turn it clockwise.

NOTE:
First, unplug the machine prior to removing and replacing the bulb. Be aware that the light bulb may be warm.



FOOT CONTROL

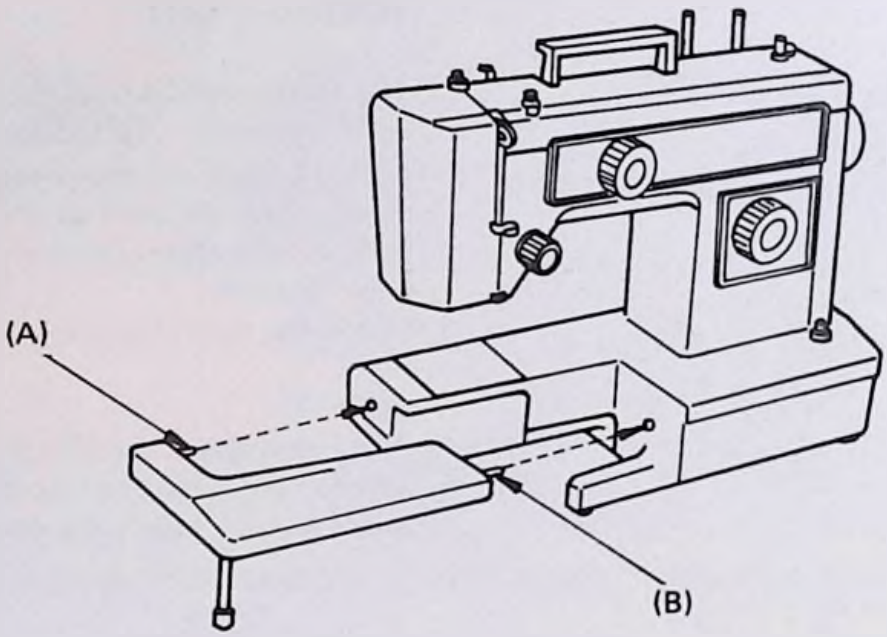
Step on this control to start to sew. The harder you press on the control, the faster the machine will sew. Slow down by reducing foot pressure on the control. You may want to practice your speed at different levels when you first use the machine.

INSTALLING EXTENSION TABLE

For all flat-bed sewing use the extension table provided with the machine. To install the extension table, simply slide the table along the free arm until the two Pins (A) and (B) enter fitting holes in the machine.

Lower the support leg.

To utilize free-arm feature for sewing tubular material, remove the extension table from the machine by pulling it to the left.



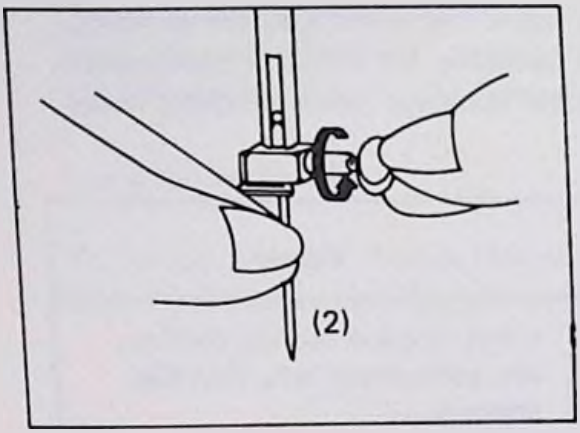
NEEDLE, THREAD AND FABRIC CHART

The needle and thread you choose depends upon the fabric you are stitching. The correct needle size is important to avoid damaging the fibers of light weight or tightly woven fabrics, and to prevent needle breakage when stitching heavy or stiff fabrics.

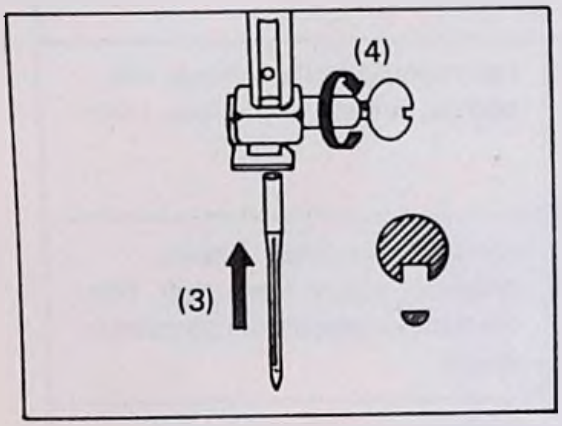
Needle size	Thread	Fabric
9 fine	*polyester *cotton covered polyester *fine mercerized cotton (70-100) *silk A	tricot, lingerie fabrics, chiffon, net, voile, sheer lace, fine silk, organdy
11 light	*polyester *cotton covered polyester *mercerized cotton (50-60) *silk A	light weight knits, jerseys, silk, batiste, taffeta, satin, lace, crepe
[illegible]	*polyester *cotton covered polyester *mercerized cotton (50) *silk A	double knits, linen, poplin, gingham, pique, seersucker, fine corduroy, velveteen, light weight wools
16 heavy	*polyester *cotton covered polyester *mercerized cotton (40-50) *heavy duty mercerized (40) *silk D (buttonhole twist for top-stitching)	heavy wools, corduroy, felt, terrycloth, canvas, upholstery and drapery fabrics

- Always use same type and size of thread in both needle and bobbin.
- Always use a sharp needle. A blunt point can cause skipped stitches or snag the fabric. Chemical finishes and man-made fibers blunt the needle faster.
- Never use a bent needle.
- If your machine is skipping stitches, replace the needle before looking for trouble elsewhere.
- When sewing very fine fabrics, use tissue paper underlay to prevent yarn distortion.
- When sewing stretch, very fine fabrics and synthetics, use a BLUE TIPPED needle. The blue tipped needle effectively prevents skipped stitches.

CHANGING THE NEEDLE

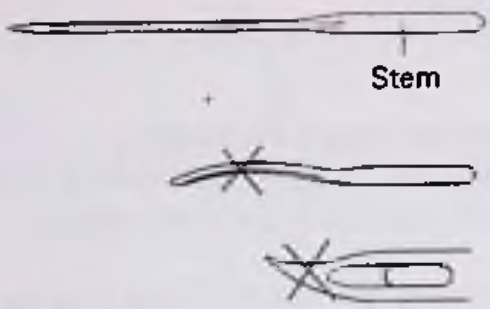


1. Turn the hand wheel towards you until the needle is at is highest position.
2. Loosen the needle clamp screw by turning its top edge towards you. Remove the needle from the clamp.



3. Place the new needle into the needle clamp with its flat side facing away from you. Push the needle up into needle clamp as far as possible.
4. Tighten the needle clamp screw firmly.

TO SELECT A SUITABLE NEEDLE



- A number indicating the size of needle is marked on the stem. The higher the number, the thicker the needle.
- Do not use any needle which is bent or blunted.

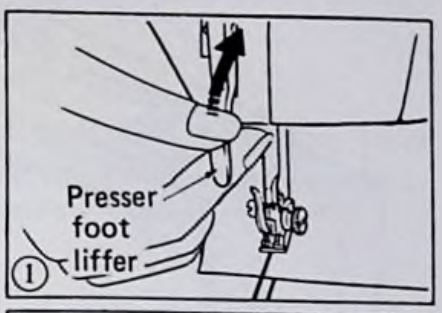
REMOVING AND ATTACHING THE PRESSER FOOT

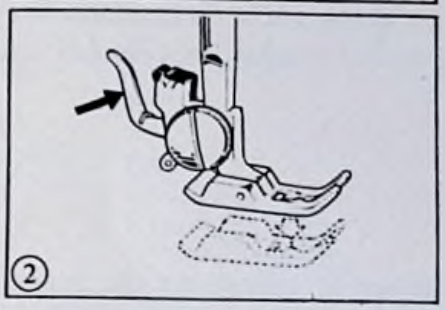
To Remove:

1. Turn the hand wheel towards you until the needle is at its highest position. Raise the presser foot by lifting the presser foot lifter.

2. By lifting the lever on the back of the foot holder, the presser foot will drop off.

Note: *Do not force the presser foot to remove it.

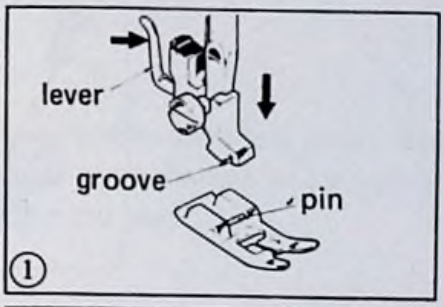


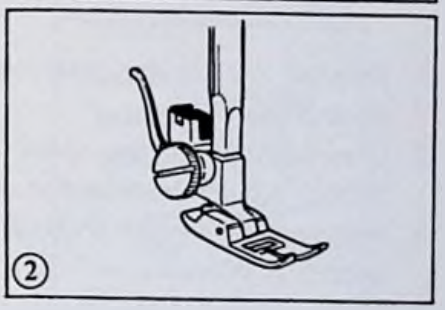


To [illegible]:

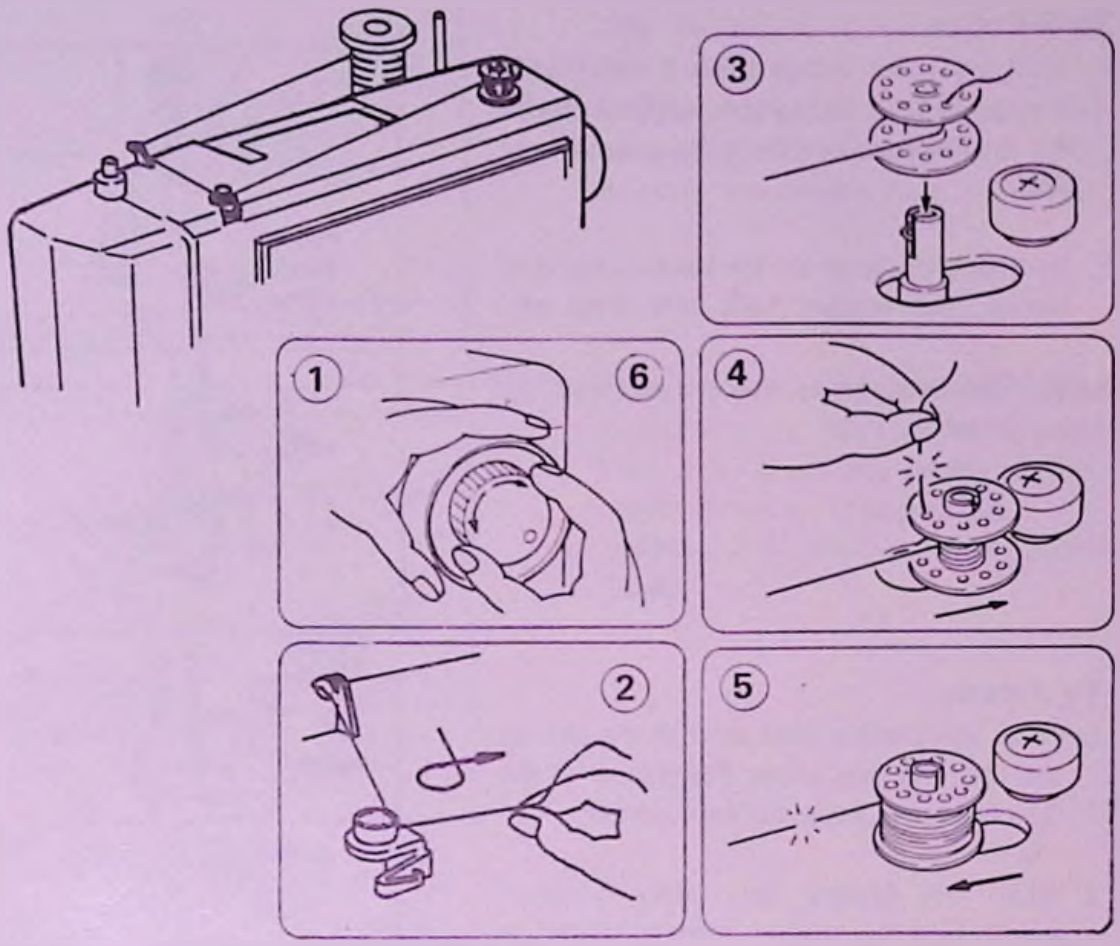
1. [illegible] the presser foot so that the pin on [illegible] lies just under the groove of the [illegible]older. Lower the foot holder.

2. [illegible] the presser foot lifter is raised you'll find the presser foot is locked in place.





WINDING THE BOBBIN



1. Release clutch by turning clutch knob toward you.
2. Draw thread from spool through bobbin winder tension disc as shown.
3. Pull end of thread through hole in bobbin as shown.
4. Place bobbin onto bobbin winder shaft with end of thread coming from the top of the bobbin. Push bobbin winder shaft to the right until it clicks. Holding onto end of thread, start machine. When bobbin is slightly filled, snip off end of thread.
5. Wind thread until winder stops. Remove bobbin. Clip thread.
6. Tighten clutch knob.

ADJUSTING BOBBIN WINDER

Correct

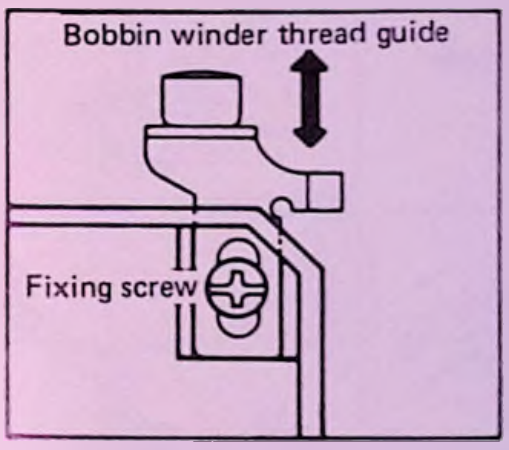
The thread must be wound onto the bobbin evenly.

Incorrect

If the thread piles up at the bottom, loosen the fixing screw of the winder tension and set the tension a little higher.

Incorrect

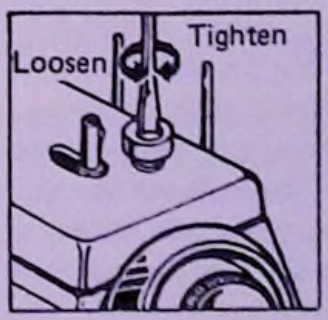
If more thread is wound on at the top of the bobbin, push the winder tension down a little.



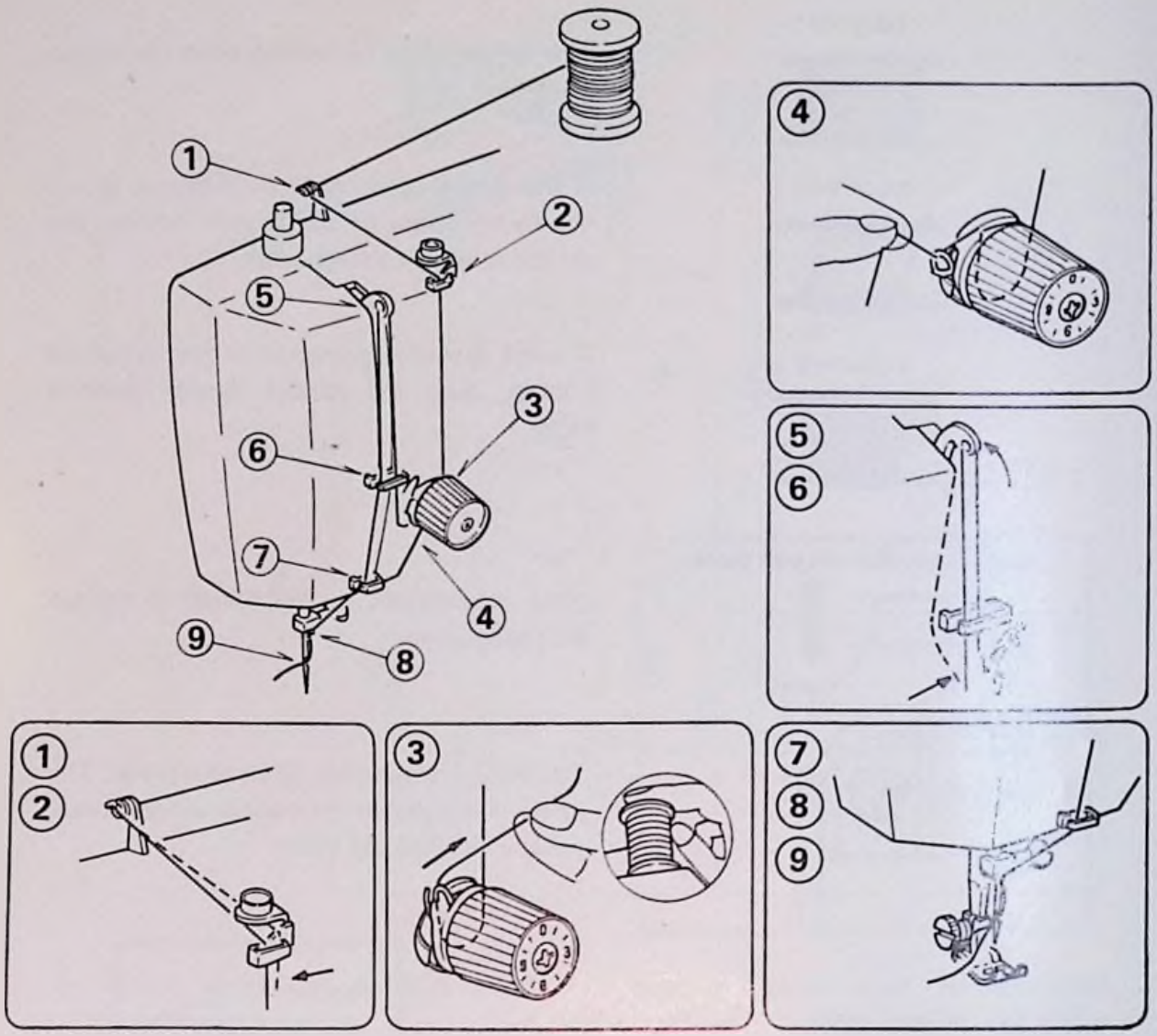
After adjustment, do not forget to tighten the fixing screw!

To locate fixing screw, open face plate. This screw is directly under bobbin winder thread guide inside the top cover.

Set the winder stop so that the bobbin is filled to about ¾ with thread. The bobbin must stop turning when the required amount of thread is wound. If the amount of thread is not correct, loosen the screw and move the winder stop as shown in the illustration at the right.



THREADING TOP THREAD

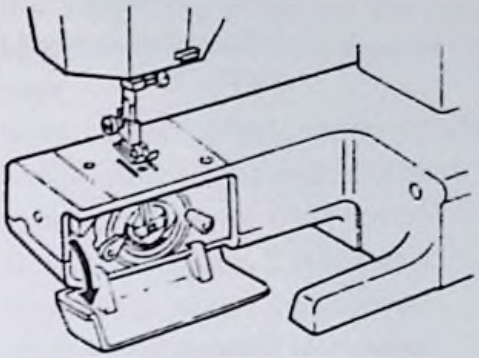


Place spool on spool pin as shown, with thread coming from the back of the spool.

Draw thread through top thread guides. Holding spool stationary with right hand, pull the end of the thread between the tension discs as shown above (3). Pull the end of the thread taut with left hand. This will pull the spring wire up and past the end of the hook. The thread will then slip into the hook when the spring is released as in (4).

Release spool of thread and thread machine through take-up lever (5) and thread guide (6) as shown above. Thread then passes through guides (7) and (8). Thread needle (9) from front to rear.

THREADING THE BOBBIN CASE



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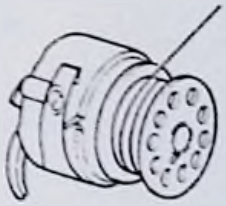

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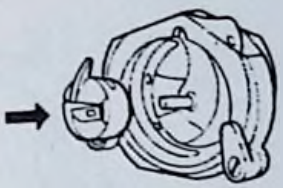

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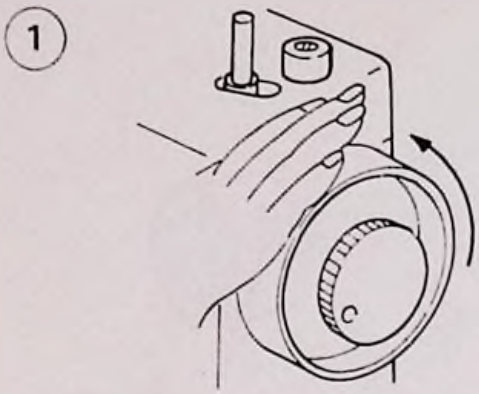
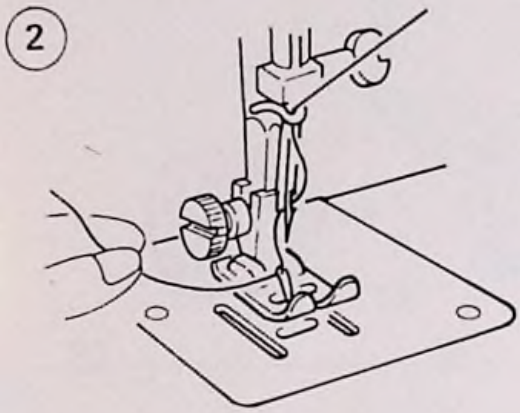
1. Remove the extension table from the machine by pulling it to the left. Open the shuttle cover by pulling down the embossed part on the left side of the cover.
2. Raise needle to its highest position by rotating hand wheel toward you.
3. To remove bobbin case from shuttle, pull open latch of bobbin case.
4. Pull bobbin case straight out of shuttle.
5. Insert bobbin into bobbin case making sure thread is coming from bobbin as shown.
6. Pull thread through slot of case as shown.
7. Pull thread under tension spring.
8. Holding latch open, position case into shuttle, and release latch. Case should lock into place when latch is released.

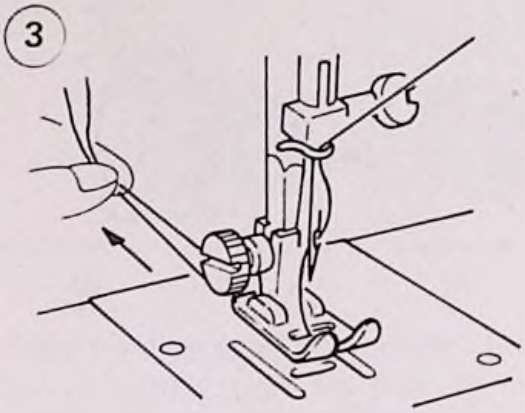
PICKING UP BOBBIN THREAD



1. Raise presser foot lever. Hold needle thread loosely in left hand and rotate hand wheel toward you one complete turn.



2. Bring bobbin thread up by pulling upper thread.



3. Pull both threads under and to the back of the presser foot, leaving 3 to 4 inches of thread clear.

If you cannot pick up bottom thread by following steps given above, then check:

1. Is needle threaded from front to back?
2. Is thread tangled around needle?
3. Is there 3 to 4 inches of thread coming from the bobbin case?
4. Is thread from bobbin case tangled?

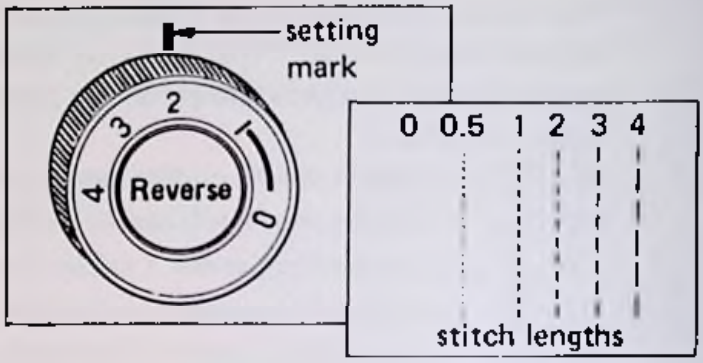
THE PATTERN SELECTOR

The desired pattern can be selected by turning the pattern selector dial. The marks on the dial correspond to the patterns shown on the panel respectively, as follows:

M( ) straight stitch, middle needle position
0 ( ) straight stitch, left needle position
1 ( ) zigzag stitch, width 1 millimeter
2 ( ) zigzag stitch, width 2 millimeter
3 ( ) zigzag stitch, width 3 millimeter
4 ( ) zigzag stitch, width 4 millimeter
5 ( ) zigzag stitch, width 5 millimeter
A( ) reverse blind stitch
B( ) 3-step stretch zigzag stitch
C( ) stretch blind stitch
automatic buttonhole sewing

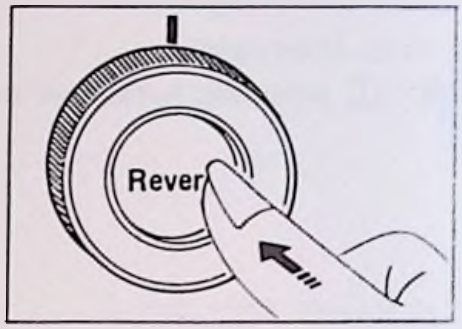
STITCH LENGTH DIAL, REVERSING BUTTON AND DROPPING THE FEED

To change the length of the stitches proceed as follows:
Turn the dial so that the number for the required stitch length is at setting mark. The numbers indicate the approximate stitch lengths in mm. The lower the number, the shorter the stitch.



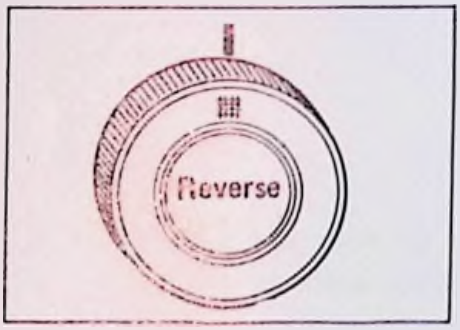
REVERSE STITCH:

Press center of the stitch length dial (reversing button) and hold for reverse stitching. Fabric will immediately start feeding backwards. Release button and machine will resume normal forward sewing.
Very useful for fastening ends of seams and darts without having to tie threads, and for strengthening seams.



DROPPING THE FEED DOG:

Embroidering and darning are best carried out with the feed mechanism disengaged. This is done by setting the stitch length dial at ▦, which drops the feed and allows the material to be moved freely under the needle.
The feed starts its normal function again as soon as you turn the stitch length dial to "0" or beyond it.

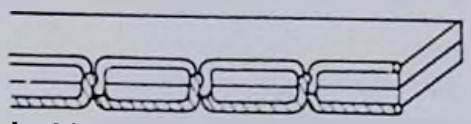


ADJUSTING TOP THREAD TENSIONS

Probably the most important control on your machine is this one that regulates your top thread tension.

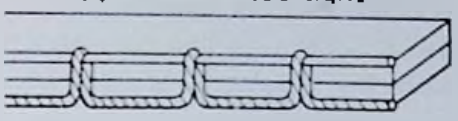
There are many reasons for having to adjust your tension. The best tension for one fabric may not be correct for another. The required tension depends upon the stiffness of the fabric, thickness of the fabric, numbers of layers of fabric being sewn, as well as the type of stitch you are making.

It is best to test the stitching on a scrap of the fabric you are using before starting to make a garment. Use the straight stitch function as shown at the right.

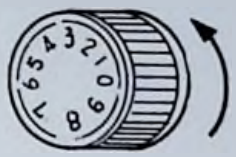


An ideal straight stitch will have threads locked between the two layers of fabric.

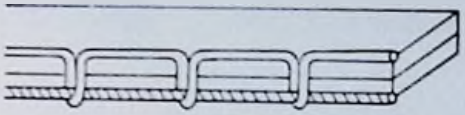
Upper thread too tight



Decrease Tension



Upper thread too loose



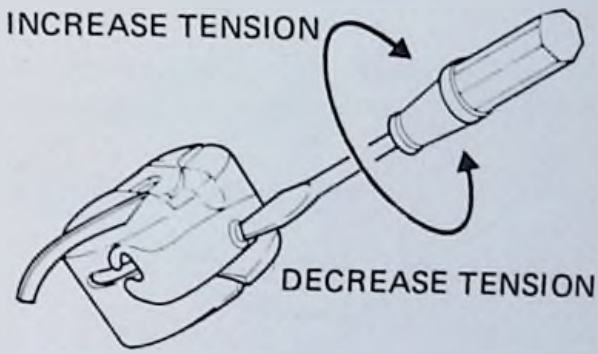
Increase Tension

ADJUSTING BOBBIN TENSIONS

Bobbin tension requires adjusting less frequently than the upper thread tension.

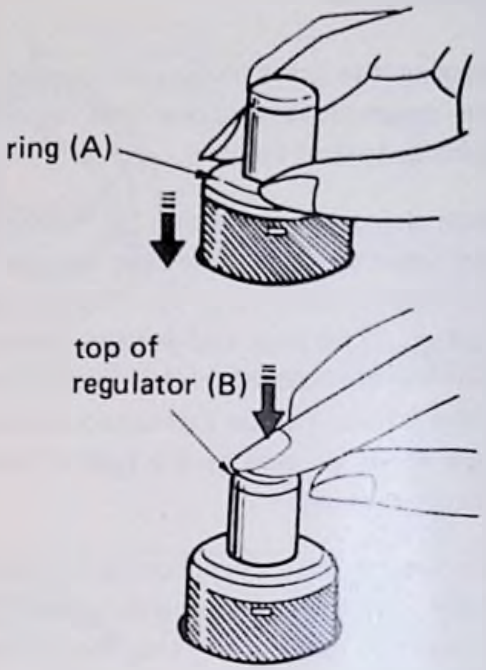
If the stitch is satisfactory but the seam is puckered, it may be necessary to loosen the tension on both the top and bottom threads. Be sure to balance them.

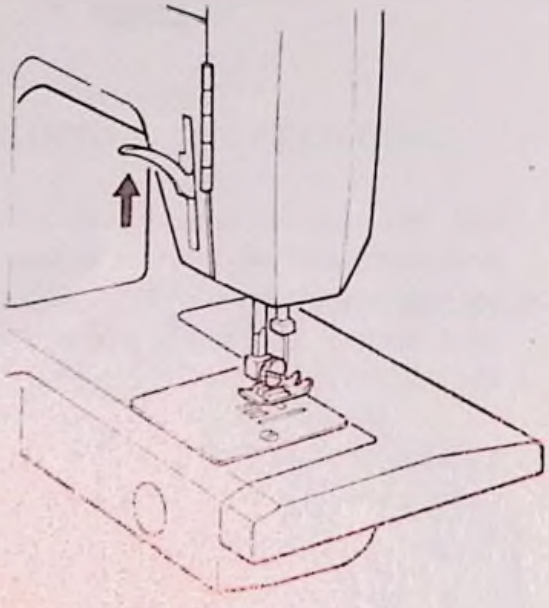
When adjusting the tension on the bobbin case, make slight adjustments with a screw driver.



REGULATING THE PRESSER FOOT PRESSURE (Patch-O-Matic)

To release the pressure, push ring (A) downwards. The machine is now free from any pressure of the presser foot.
For sewing medium or light materials, push regulator (B) down just a little to provide the light pressure required.
If you are sewing thick or heavy materials, push the regulator (B) farther down to increase the pressure on the material.





PRESSER FOOT LEVER

To aid you in the placement of heavy fabrics under the presser foot, the lever can raise foot beyond the normal "up" position. This is also an aid in changing your presser feet.

PART II START SEWING

Now that you are familiar with the controls on your machine and with the accessories provided for the machine, you are ready to start to sew with your new **NELCO** sewing machine. Below are some good habits to follow each time you sit down to sew:

1. Test the needle it should be straight, properly set and sharp on the point. Select the correct size for the fabric and thread being used. Do not be afraid to change your needle frequently. Many of the new fabrics made of synthetic blends tend to dull the needles more easily than fabrics made of natural fibers.

2. Before placing the material on the machine, see that the ends of the threads have been drawn about 4 inches to the rear of the machine. Hold on to threads during the sewing of the first 3 or 4 stitches of the seam.

3. Test the machine stitch on a scrap of fabric you plan to use. The fabric should be double thickness. Adjust the machine for the length of stitch and tension suitable for your fabric.

4. Fabric should be placed under the presser foot with the bulk of the material to the left of the needle and the right edge of the material placed on the 5/8" seam marking on the needle plate when making a simple seam.

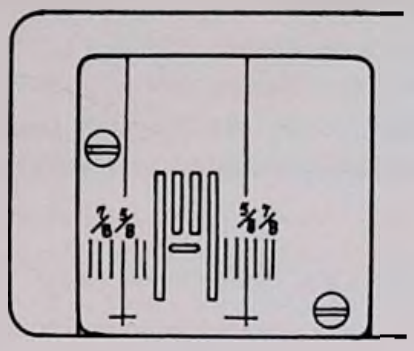
5. Run the machine at a slow even speed. The more pressure you put on the foot control, the faster the machine will sew.

6. Fasten each seam by back tacking at the beginning and end of the seam.

7. Always finish sewing each seam with the needle at its highest point.

8. Guide the fabric gently with your hand in front of the needle. Never pull or hold the fabric in such a way that the normal feeding is altered.

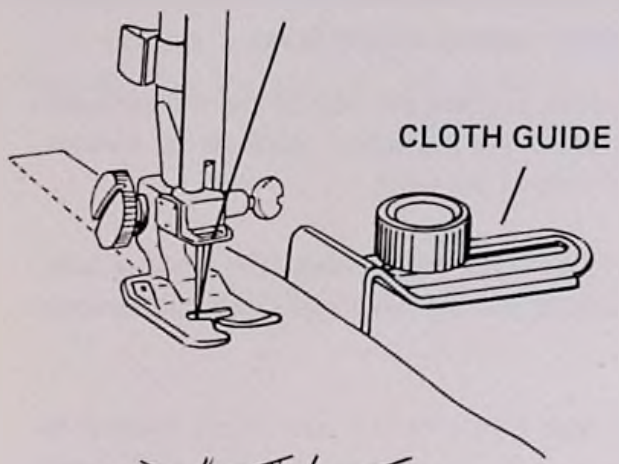
9. When turning the hand wheel manually, always turn it toward you.

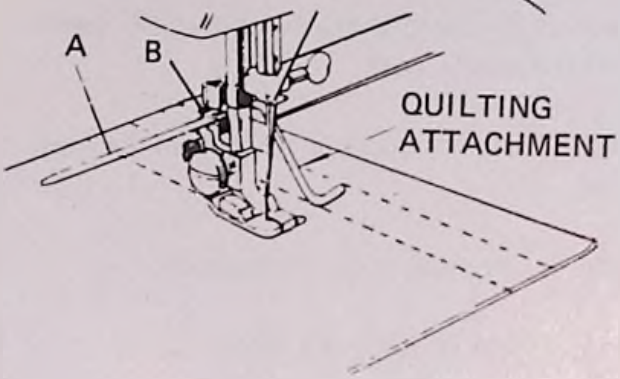


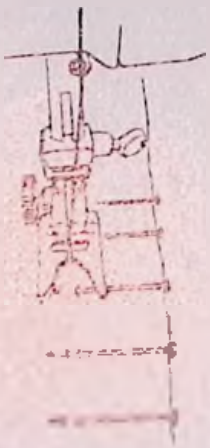
Keeping Stitching Straight

Your machine has three aids to help keep your stitching straight, whether stitching seams or doing decorative stitching.

* Numbered guidelines on the right side on needle plate.
  Numbers indicate distance, in eights of an inch, form the needle. For 5/8" seam, line up your fabric with the numbered 5/8" guideline.
* Cloth guide attachment
  Use for stitching seam widths that are wider than markings on needle plate, and for making wide hems. Also use as a guide for topstitching. Fasten cloth guide to machine by inserting thumb screw into hole in bed of machine. Adjust cloth guide to desired distance from needle and tighten screw.
* Quilting attachment
  Use for stitching parallel lines without marking fabric when quilting, shirring, smocking, or making rows of decorative stitches.
  Insert bar (A) into hole in the Foot Bracket (B). It is movable from side to side to set it at the desired position.







Pin Basting

Place pins at right angles to presser foot with pins just nipping into fabric at stitching line. Never place pins on underside of fabric in contact with fabric feed or so presser foot rides over head of pin.

STRAIGHT STITCH

Presser foot	zigzag foot
Pattern selector	M(⊂⊃) or O(⊂⊃)
Stitch length dial	0.3 – 4

zigzag foot

You will find in garment construction that you are doing two types of sewing-temporary and permanent.

1. Temporary stitching-Usually the longest stitch possible and often done on a single layer of fabric. The various types of temporary stitching are:
   - Basting
   - Stay stitching
   - Guide line marking

2. Permanent stitching. This is the actual stitching that holds the garment together. Much of this stitching is visible on the outside of the garment and therefore must be good looking.

The best length stitch to use for medium weight fabrics is 10-12 stitches per inch. This is in the middle range of the Stitch Length dial.

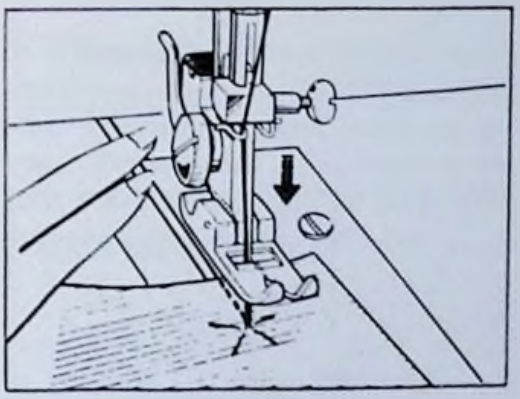
You must remember to lengthen the stitch for heavier fabrics, multiple layers of fabric and thick seams. Some of these seams are:

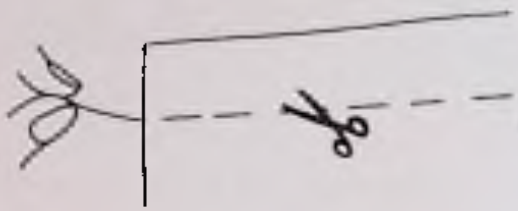
- Comma two layer seams
- Curved two layer seams
- Top stitched three layer seams
- Top stitched four layer seams

When you have two seams crossing each other with considerable thickness, sew slowly and carefully so the seam will be as strong as possible in this area.

Starting Sewing

1. Be sure both the threads are drawn back under the presser foot.
2. While holding the threads with your left hand, turn the hand wheel toward you to bring the needle into the fabric where you wish to start sewing.
3. Lower the presser foot, and press the speed controller gently, then start sewing slowly.
   *Sew a few reverse stitches by pushing reverse button for reinforcing the end of seams.





Basting

Machine basting is very useful for joining seams for trial fittings, marking construction guidelines, and basting pleats and hems.

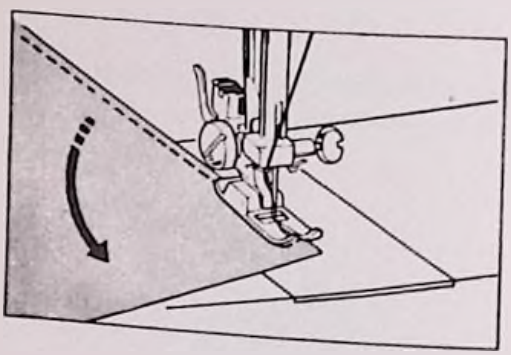
Use longest stitch possible, setting stitch length at 4. Loosen tension on upper thread. Choose thread color to contrast with your fabric so it can be easily seen.

Basting stitches can be removed easily by clipping upper thread, then pulling out lower thread.

Staystitching

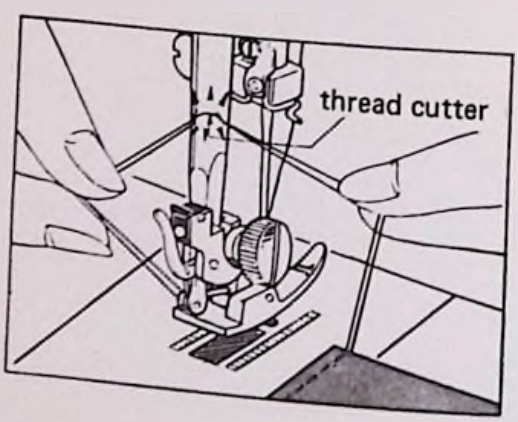
Staystitching prevents stretching and acts as a guideline for clipping and joining curved edges. Staystitch any edge that might stretch during handling before the final stitching.

Staystitch on a single layer of fabric; always stitching in the direction of the grain. Place stitching 1/8" away from seamline in the seam allowance. Use 12 stitches per inch for most fabrics.



Changing Sewing Directions

1. Stop the machine, and turn the hand wheel toward you to bring the needle down into the fabric. Raise the presser foot.
2. Pivot the fabric around the needle to change direction as desired.
3. Lower the presser foot and continue the sewing.



Fastening Seams

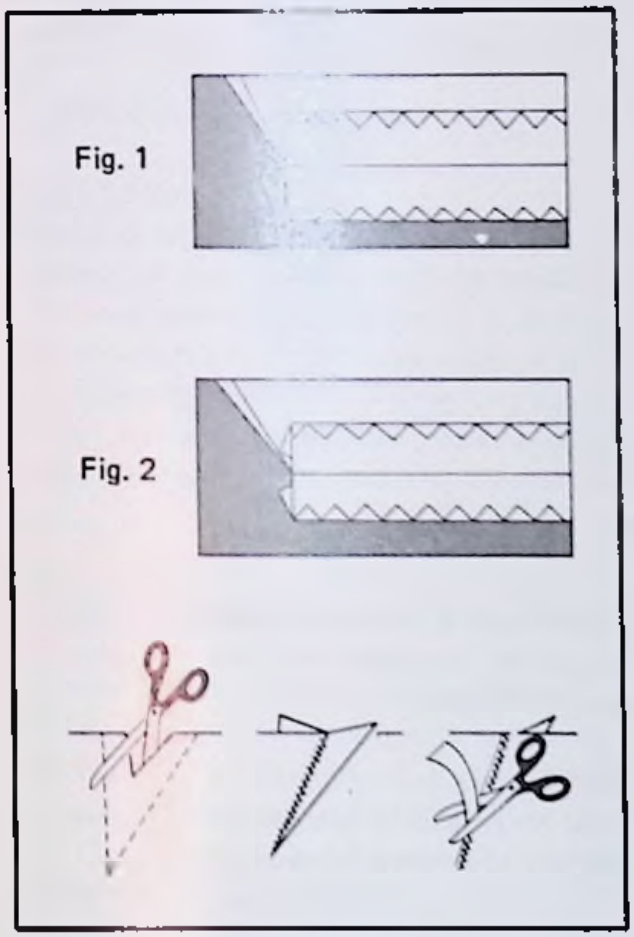
1. For fastening the ends of seams, press down the reversing button and sew several reverse stitches.
2. To remove the fabric, raise the presser foot and draw the fabric away from you.
3. Sever threads on thread cutter at the rear of presser bar or with a pair of scissors.
   Leave about 15 cm (6 inches) of thread hanging from the needle eye.

ZIG-ZAG STITCHING

Presser foot	zigzag foot
Pattern selector	1·5
Stitch length dial	0.3 – 4

zigzag foot

This type of stitching greatly expands the use of your machine. This is the feature that enables you to overcast seams, applique and sew on buttons. Using the range of widths as indicated on the pattern selector, you can sew any width you desire. Since this is a range, you may set the dial between the illustrated widths.



OVERCASTING

This is one of the more frequently used zigzag stitches in garment construction. You may want to overcast along the raw edge of each seam allowance or fold the raw edge toward the garment and stitch.

Fig. 1 shows the raw edge finished.
Fig. 2 illustrates the folded edge stitched.

Stitch so the needle pierces the fabric just short of the outside edge. Raw or worn edges of older garments can be overcast to prevent further raveling.

INTERFACING DARTS

To reduce bulk of interfacing darts, cut interfacing down center between dart lines. Overlap cut edges, matching dart lines. Zigzag stitch along marking line from point to wide end of dart. Trim both raw edges close to stitching.

CHECKING TENSIONS

The easiest way to check tensions is to sew a medium zigzag stitch on the fabric you will be using.

Use the appropriate type of thread and needle. Use different colors of thread on the bobbin and upper spool.

Sew a line of medium zig-zag stitches. The bobbin thread should not show on the top of the fabric.

Adjust the top tension if necessary to achieve the stitch formation mentioned above.

SHELL STITCHING

Presser foot	zigzag foot
Pattern selector	A( )
Stitch length dial	1.5

When sewing this stitch, allow needle to just clear the right edge of the fabric when it zigzags.

NOTE:
You may need to increase your tension slightly to achieve the shell affect.

SATIN STITCHING

Presser foot	zigzag foot
Pattern selector	1-5
Stitch length dial	0.3 to 1

Closely spaced zigzag stitches are called satin stitches. This is an attractive stitch used for appliqueing, bar tacking or sewing on buttons.
Whenever you are using this stitch, it is well to remember to loosen the tension of the top thread slightly. The wider the stitch sewn the looser the tension.
If you are stitching on a very soft fabric, it is well to use a backing of tissue paper or interfacing for a well formed stitch. Puckering of the material will be eliminated and the bobbin thread will not be visible on the top side of the fabric.
It is best to practice a sample design on a fabric scrap before sewing design on garment.

APPLIQUEING

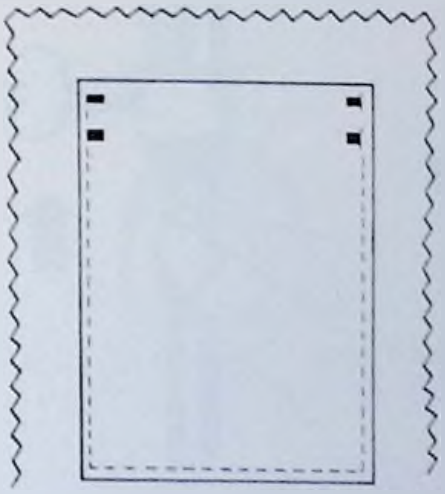
SETTINGS

Same as with Satin Stitching
Select an applique design to be applied to your garment and baste it in place. Satin stitch around the raw edge of the applique completely covering the edge. You may want to do this with a contrasting color of thread or self color.

BAR TACKING

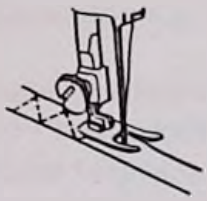
This stitch is similar to a very short satin stitch and is used to reinforce points of strain such as corners of pockets and straps on lingerie.

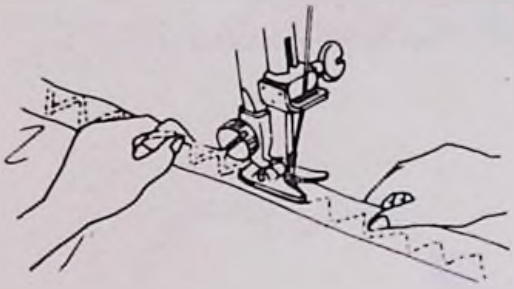
Sew 4 to 6 zigzag stitches.



3-STEP STRETCH ZIG-ZAG STITCH

Presser foot	zigzag foot
Pattern selector	B ( )
Stitch length dial	0.3 to 4





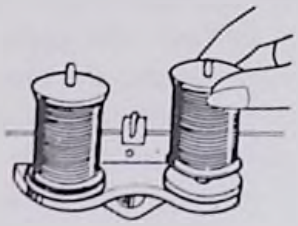
3-Step stretch zig-zag stitch gives added flexibility to the stitch. Use to overcast edges of seams, facings and hems to prevent raveling and to keep lightweight knits from rolling. Besides knits, use for edges of thin, easily frayed fabrics which have a tendency to pucker when overcast with ordinary zig-zag. Also suitable for overcasting heavy fabrics such as woolens and terrycloth.

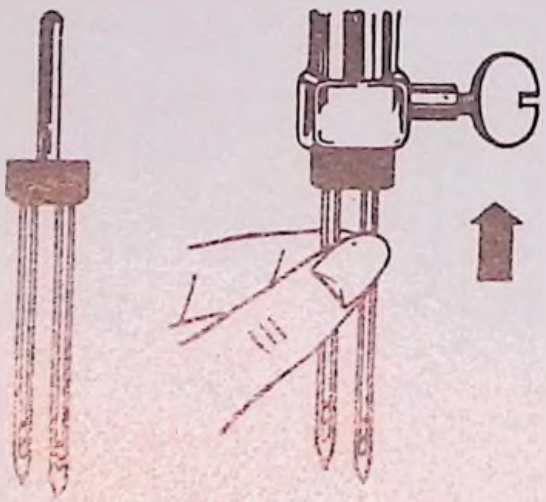
Use for attaching elastic. Mark elastic and garment waistline in fourths. Place elastic over fabric and pin together at the markings. Take a few stitches to anchor elastic to fabric, then stretch elastic between pins as you sew.

Mend tears and patches on knits and light weight fabrics with stretch zig-zag rather than regular zig-zag.

SEWING WITH A TWIN NEEDLE

Presser foot	zigzag foot
Pattern selector	0-3
Stitch length dial	0.5 to 1



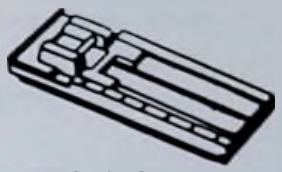


1. Set the pattern selector in the range of "0-3", otherwise a needle may hit the needle plate and break.
2. Insert the twin needle in the same way as a single one (flat side away from you). Place two spools of threads on the spool pins.
3. Thread machine, taking care that the two strands of thread are separated as much as possible when placing them in the holes of the thread guides and the tension discs.
4. Be sure to place the two round felts provided in the accessories over the spool pins. To turn a corner with a twin needle, stop stitching when right hand needle just pierces fabric. Raise presser foot, turn fabric half a turn pivoting fabric on tip of needle. Lower presser foot and take one stitch. Raise presser foot again, complete turn, and begin stitching in new direction.

SEWING BUTTONHOLES

The buttonhole mechanism built-in this machine makes it possible to sew button holes in a short time without turning the material.

Presser foot	buttonhole foot
Pattern selector	
Stitch length dial	0.3 to 1

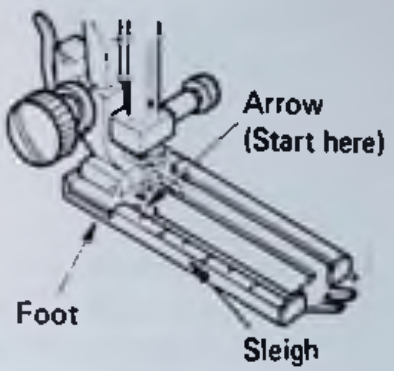


Buttonhole foot

Raise the foot and the needle to its highest position. Replace the foot with the buttonhole foot for sewing buttonholes.
Mark the location and the desired length of buttonhole on the fabric using a pencil or tailor's chalk.

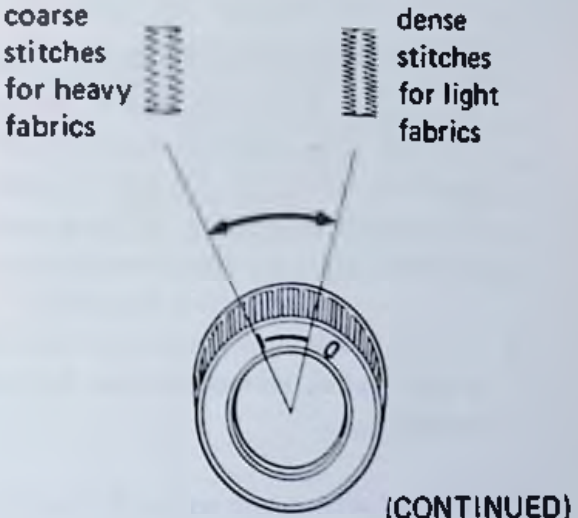
Note: *To find the most suitable stitch length, it is better to sew a sample buttonhole on a piece of waste fabric.

*When sewing very fine fabrics and synthetics, decrease the pressure of foot and use a tissue paper under it to prevent yarn distortion.



buttonhole foot

*The yellow mark on the stitch length dial shows range of buttonhole sewing. An adjustment can be made by setting the mark, as shown.



(CONTINUED)

SEWING BUTTONHOLES (continued)

1. Set the pattern selector at " ▯ ". Then pass the needle thread through the opening in the buttonhole foot and draw both needle and bobbin threads to the left side. Turn the hand wheel towards you until the needle comes to the point (1).
2. Lower the foot and sew slowly until a desired length is sewn, then stop the machine at (2).

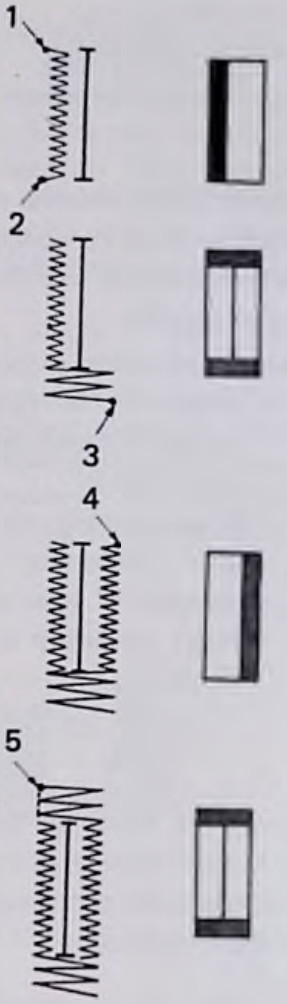
3. Raise the needle and set the pattern selector at " ▯ ". Then sew several stitches of bar tack until the needle is at point (3).

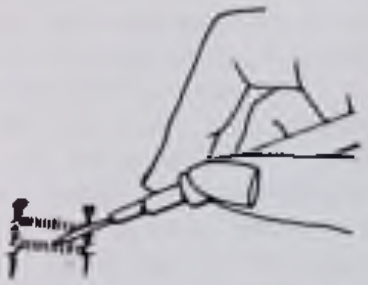
4. Raise the needle and set the pattern selector at " ▯ ", then sew the right side of buttonhole just as the same length as the left side of buttonhole. Stop the machine at (4).

5. Raise needle and set the pattern selector at " ▯ ", then sew several stitches of final bar tack. Stop the machine with the needle at point (5). To lock threads, set the pattern selector at "0"(zero point of zigzag width)" and sew a few stitches.

6. Cut the buttonhole open carefully using a seam ripper, taking care not to damage the bar tacks.

Place a pin across each end of buttonhole to prevent end stitching.



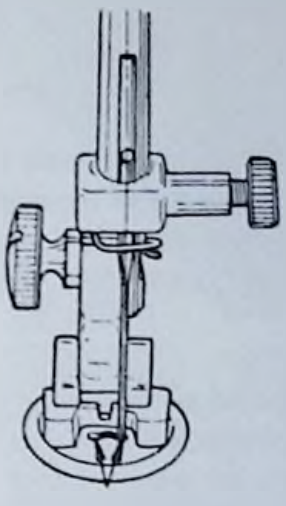


BUTTONS

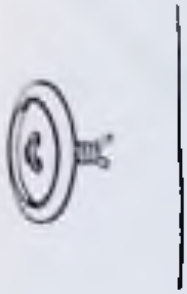
Presser foot	Button foot
Pattern selector	1·5
Stitch length dial	

Button foot

1. Align two holes of button with slot of presser foot and lower foot to hold the button securely.
2. Turn hand wheel manually until needle point is just above button.
3. Adjust stitch selector so needle enters right hole of button.
4. Turn hand wheel by hand so needle enters second hole. The stitch selector may need to be adjusted again. Stitch a number of times.
   NOTE:
   You may find it helpful to use transparent tape to position your button and to keep it in place during sewing. Tear away after sewing.
5. Finish sewing with an extra two inches of thread remaining. Draw these threads to reverse side of garment and tie.



Holes of button



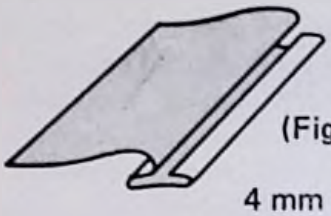
Thread Shank

Sew-through buttons on coats and jackets should have a thread shank to make them stand away from the fabric. Place a straight pin or sewing machine needle on top of button between the holes, and sew over the pin or needle. Pull thread to back of button and wind around stitches to form a firm shank. Tie thread ends securely.

SEWING BLIND HEMS

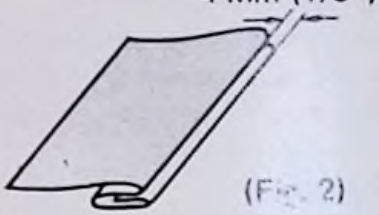
Presser foot	Blind hem foot
Pattern selector	C( )
Stitch length dial	1 to 3

1. Turn up the hem with the desired width and press. (Fig. 1)



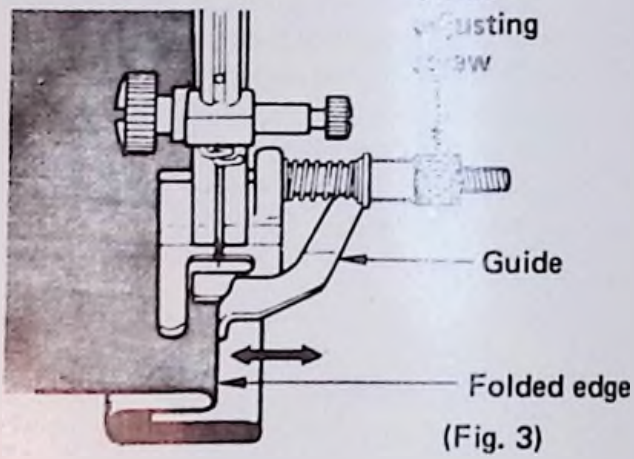
(Fig. 1)

2. Fold hem back against the right side of the garment with top edge of hem extending about 4 mm (1/6 inches) to right side of garment fold. (Fig. 2)



(Fig. 2)

3. Place the garment under the foot so that double-folded edge runs along the hem guide and lower the foot.
Sew slowly for better control, making sure the narrow zigzag stitches will fall on the hem edge and wide zigzag stitches will just catch one thread of folded edge. (Fig. 3)



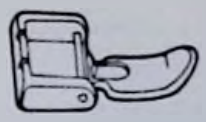
(Fig. 3)

4. Unfold the fabric and you will have a blindstitch hem (Fig. 4)

(Fig. 4)

SEWING ZIPPERS

Presser foot	zipper foot
Pattern selector	M(⊂⊃)
Stitch length dial	1 to 4



Zipper foot

Raise the foot. Raise needle to its highest position by turning the hand wheel towards you. Replace the foot with the zipper foot.

1. Pin or baste the zipper tape to the fabric and place the work-piece in position under the foot.
   Attach snap on zipper foot so that the needle passes on left hand side.
2. When starting to sew, bobbin needle and bobbin threads should be drawn under the foot.
3. Sew on the right side of the zipper by guiding zipper teeth as close as possible to the needle plate. Before the foot reaches the slider on the zipper tape, raise the foot and open the zipper by keeping the needle in the fabric.
   Lower the foot and sew on the remainder of the seam.
4. To sew the left side of zipper change position of foot to bring the foot to the left side of the needle. Sew in the same way as on the right side of zipper.

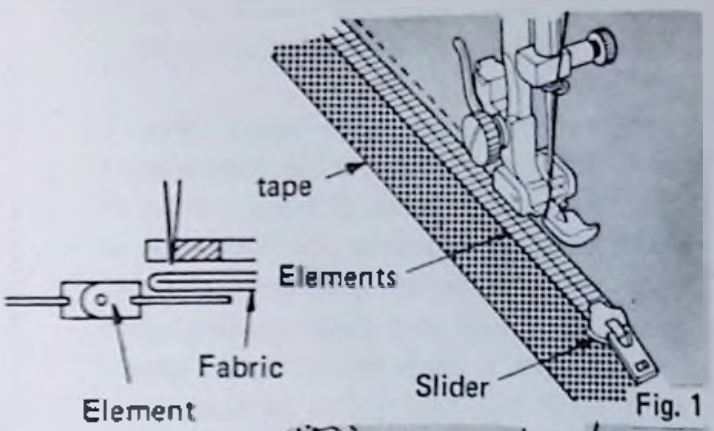


Fig. 1

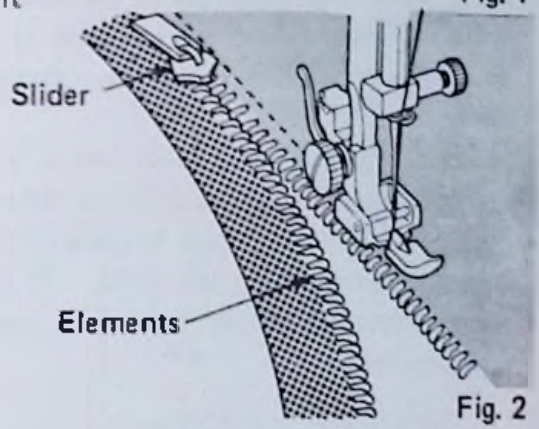
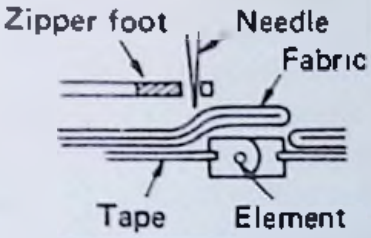


Fig. 2



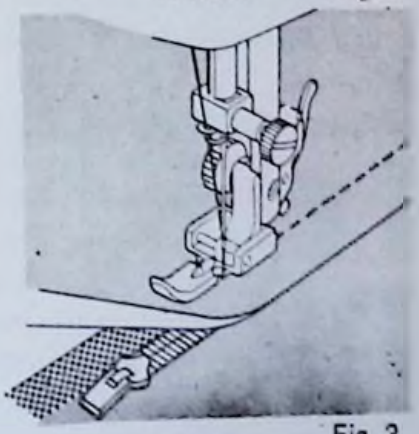
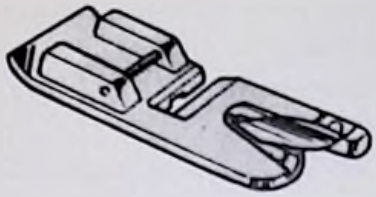


Fig. 3

HEMMING

Presser foot	hemmer foot
Pattern selector	M(⊂⊃)
Stitch length dial	1 to 4

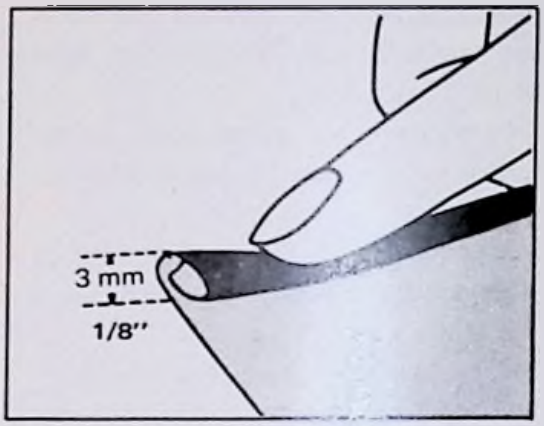


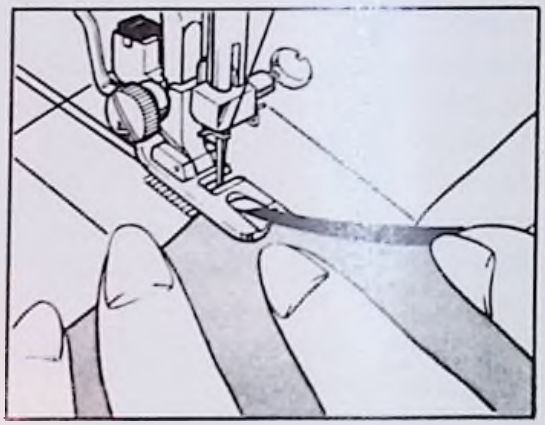
hemmer foot

Raise the foot. Raise the needle to its highest position. Replace the foot with the hemmer foot.

Trim and straighten fabric edge. For easy insertion of fabric in hemmer foot, first cut off corner of fabric. Then fold edge of fabric over about 1/8", then fold it over again for a length of 2". Insert fabric fold into spiral opening of hemmer foot. Move fabric back and forth until the fold forms a scrolled shape. Draw fabric toward you until beginning of hem is underneath needle. Lower foot.

Stitch slowly as you guide fabric into hemmer foot. Do not push or pull fabric. If edge of material tends to slide out of hemmer, guide it to the right. If too much material enters hemmer, draw fabric to the left.





MENDING AND DARNING

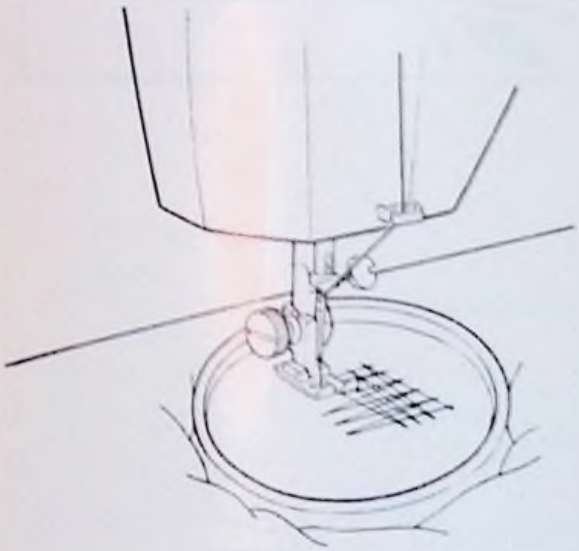
MENDING

Presser foot	zigzag foot
Pattern selector	B( )
Stitch length dial	1 to 2

To repair a straight or three-cornered tear, position the tear under the needle in such a way that the stitching catches both sides of the tear. When mending a three-cornered tear, stitch from each end to the center. It is well to use a piece of fabric under the tear for reinforcement.

DARNING

Presser foot	zigzag foot
Pattern selector	A( )
Stitch length dial	2 to 3



Push down the outer ring of the pressure regulator. This will release the pressure on the presser foot.

Stretch fabric between embroidery hoops with hole centered. Lower presser bar and sew at a slow speed moving fabric back and forth with a steady rhythm to cover darning area. When it is covered, turn fabric 1/4 a turn and sew layer of stitching across first layer. If fabric is thin or badly damaged in hole area, you may want to put a separate piece under the hole for reinforcement. Be sure to return pressure on presser foot to original adjustment after darning.

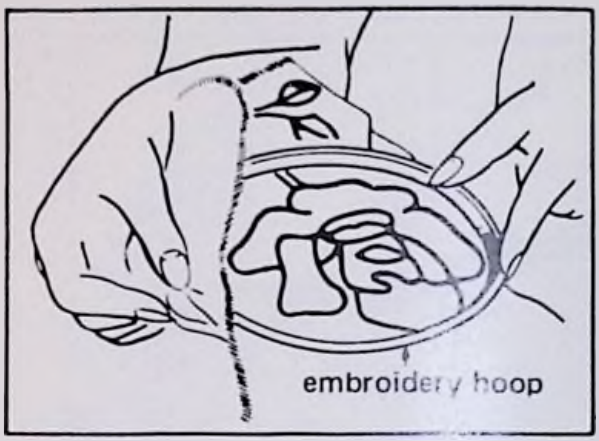
EMBROIDERY

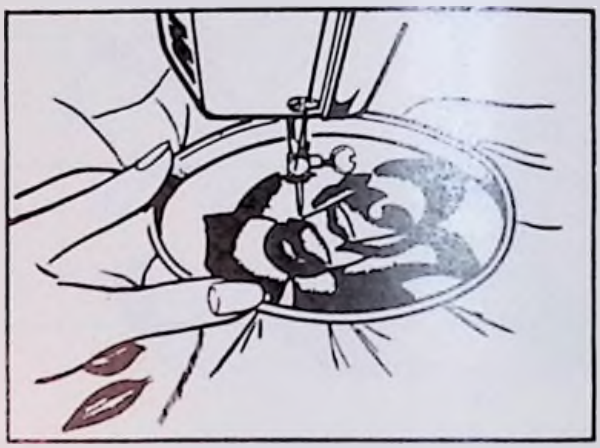
Remove presser foot
Pattern selector. . . . . M(⊕)
Stitch length dial. . . . . ▦

Place the fabric in an embroidery hoop. Set the stitch length dial at " ▦ ". Lower the presser foot lifter. Hold the embroidery hoop firmly with your hand. While sewing the desired pattern, move the embroidery hoop slowly and do not allow your fingers to get near the needle.

*Set the needle thread tension a little looser so that the bobbin thread is not pulled through to the right side of fabric.

*It is recommended to mark the required embroidery pattern on the right side of the fabric with a pencil or tailor's chalk.





PART III CARING FOR YOUR MACHINE

CLEANING FEED DOGS AND SHUTTLE

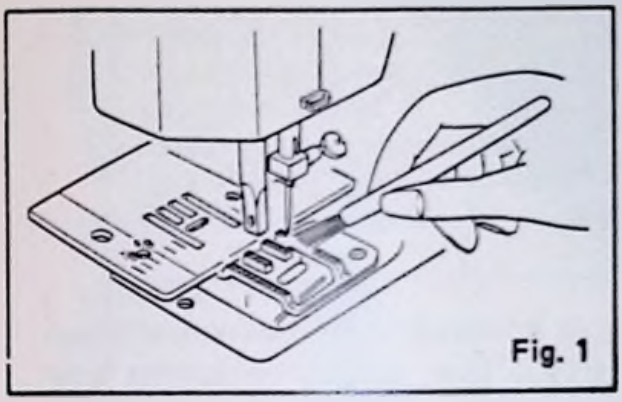


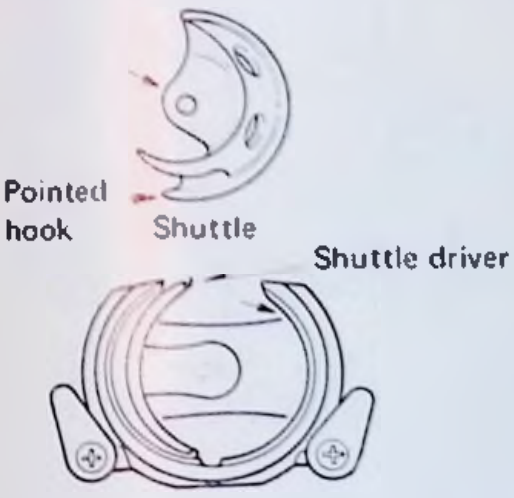
Fig. 1

Fig. 1 Cleaning the feed dog with a brush.

To insure the best possible operation of your machine, it is necessary to keep the essential parts clean at all times. Using a small brush, remove the lint that accumulates in the shuttle area and around the feed dog.

Shuttle

Shuttle Race Cover



Shuttle Race

Fig. 2

Fig. 2 Parts of the Shuttle Assembly

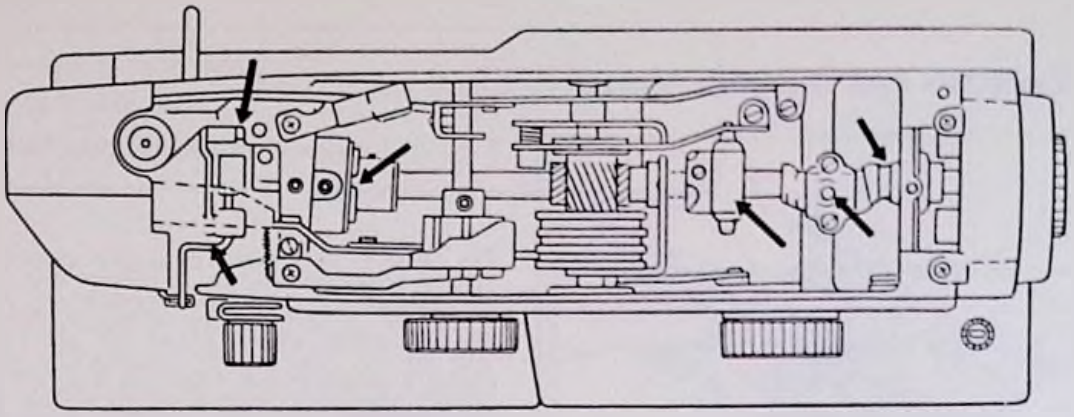
To Clean the Shuttle Area

1. This area must be kept free of dust, lint and occasional tangled thread. Raise the needle to its highest point and remove the bobbin case.
2. Push levers of shuttle race aside and lift shuttle race cover and shuttle out.
3. Clean the shuttle race with small brush.
4. Put a drop of oil on the center pin of the shuttle and shuttle race. (see arrows).

To Replace Shuttle Assembly:

1. Position shuttle race as illustrated so that race is forming half moon on the left side of the machine.
2. Hold shuttle by center pin and position shuttle so as to form a half moon on the right side. Pointed hook will be on the bottom.
3. Place shuttle race cover into place over shuttle assembly.
4. Snap the levers into position.

OILING

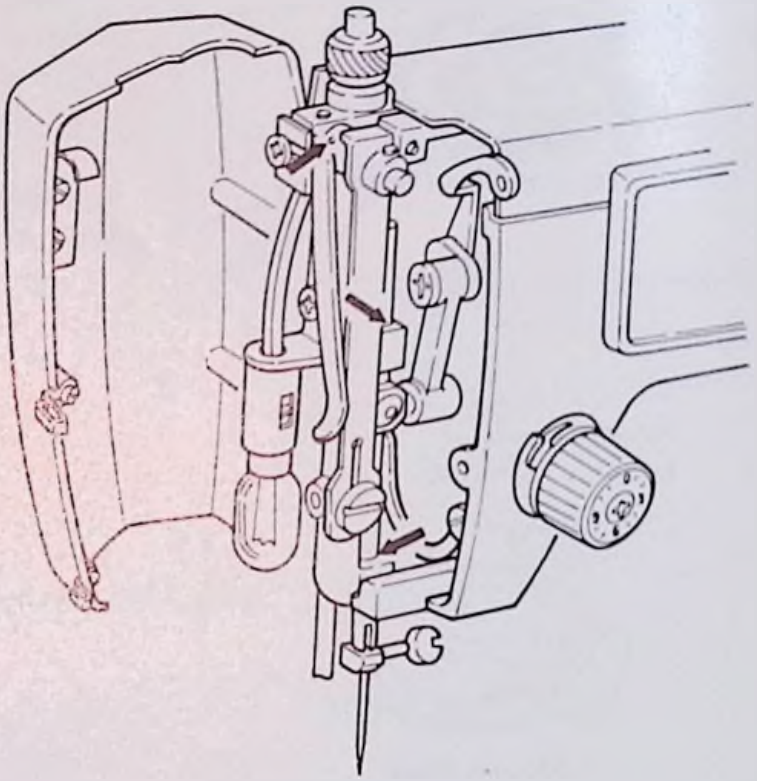


As is the case with all precision machinery, it is necessary for maximum efficiency to properly oil and clean at reasonable intervals. Even though the machine is not in constant use, it is important to oil your machine since the oil will dry after standing over a period of time. Use a good grade of sewing machine oil.

NOTE: Before oiling, clean away all lint or foreign matter. One or two drops of oil are sufficient at each point.

The machine should be oiled at the arrow points shown. After you have cleaned and oiled your machine, it is advisable to run the machine at high speed so that the oil will penetrate all moving parts.

: After cleaning and oiling machine, wipe away all excess oil and sew on a scrap of material to be sure machine sews cleanly.



Inside Face Plate

Sewing face plate open and oil all moving parts at friction points.

PROBLEMS – and PROBABLE CAUSES

In most cases, poor sewing results are due to a damaged needle. Always examine needle first before checking other items.

1. **SKIPPING STITCHES**
   - bent or blunt needle
   - wrong size needle
   - needle inserted incorrectly
   - upper thread tension too tight
   - pressure on presser foot too light

2. **UNEVEN STITCHES**
   - bent or blunt needle
   - wrong size needle
   - incorrect threading
   - pulling fabric during sewing
   - upper thread tension too loose
   - pressure on presser foot too light
   - loose presser foot
   - bobbin wound unevenly
   - bobbin inserted incorrectly in case

3. **NEEDLE BREAKS**
   - bent needle from needle plate or presser foot
   - needle inserted incorrectly
   - pulling fabric during sewing
   - loose presser foot touches needle
   - needle too fine for fabric
   - turning Pattern Selector dial with needle in fabric

4. **UPPER THREAD BREAKS**
   - bent or blunt needle
   - incorrect threading
   - upper tension too tight
   - needle inserted incorrectly
   - needle touches presser foot
   - needle eye has sharp edges
   - poor quality thread
   - knots in thread
   - starting to stitch too fast

5. LOWER THREAD BREAKS
   - bobbin case threaded incorrectly
   - bobbin case inserted incorrectly in machine
   - bobbin wound unevenly
   - bobbin wound too full
   - bobbin tension too tight
   - needle plate hole has sharp edges
   - bent bobbin
   - poor quality thread

6. FABRIC PUCKERS
   - bent or blunt needle
   - upper thread tension too tight
   - both upper and lower tensions too tight
   - using two different sizes or kinds of thread
   - fabric too sheer or soft (use tissue paper underlay)

7. MACHINE DOES NOT FEED FABRIC
   - stitch length dial set at 0
   - pattern selector on " "
   - presser foot not down completely
   - thread knotted under fabric

8. BUNCHING OF THREAD UNDER FABRIC
   - upper and lower threads not drawn back under presser foot
   - pattern selector on " "

9. BOBBIN DOES NOT WIND PROPERLY
   - incorrect threading for winding
   - thread guide not properly adjusted
   - bobbin spindle not positioned correctly
   - bobbin winder stop not positioned correctly

10. MACHINE RUNS SLUGGISHLY
    - dirt or lint between teeth of fabric feed
    - dirt or lint in shuttle
    - machine needs oiling
    - stop motion knob not tightened

11. MACHINE WILL NOT SEW
    - cord not plugged into outlet
    - 3-way connector not plugged into machine socket
    - stop motion knob not tightened
    - motor belt too loose or broken

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